

Form PTO-1449		U.S. Department of Commerce Patent and Trademark Office								Atty. Docket No. 57906-A/JPW/AJD	Serial No. 09/464,902
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)										Applicant(s) William C. Olson and Paul J. Maddon	
										Filing Date December 16, 1999	Group Art Unit 1648

U.S. PATENT DOCUMENTS

Examiner Initials	Exh. No. [§]	Document Number								Date	Name	Class	Subclass	Filing Date If Appropriate
ele	1	5	9	9	4	5	1	5	11/30/99	Hoxie				
	2	6	1	0	7	0	1	9	08/22/00	Allaway et al.				
	3	6	3	4	4	5	4	5	02/05/02	Allaway et al.				
	4	6	5	4	8	6	3	6	04/15/03	Dragic et al.				
	5	6	7	5	9	5	1	9	07/06/04	Li et al.				

FOREIGN PATENT DOCUMENTS

		Document Number								Date	Country	Class	Subclass	Translation		
														Yes	No	
ele	28	9	7	2	6	0	0	9	07/24/97	PCT						
	29	9	7	4	5	5	4	3	12/04/97	PCT						
	30	9	7	4	7	3	1	9	12/18/97	PCT						
	31	9	7	4	9	4	2	4	12/31/97	PCT						
	32	9	8	5	6	4	2	1	12/17/98	PCT						

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

ele	39	Allaway, G.P., K.L. Davis-Bruno, B.A. Beaudry, E.B. Garcia, E.L. Wong, A.M. Ryder, K.W. Hasel, M.C. Gauduin, R.A. Koup, J.S. McDougal and P.J. Maddon. 1995. Expression and characterization of CD4-IgG2, a novel heterotetramer that neutralizes primary HIV type 1 isolates. AIDS Res Hum Retroviruses 11: 533-539;
	40	Allaway, G.P., A.M. Ryder, G.A. Beaudry and P.J. Maddon. 1993. Synergistic inhibition of HIV-1 envelope-mediated cell fusion by CD4-based molecules in combination with antibodies to gp120 or gp41. AIDS Res Hum Retroviruses 9: 581-587;
	41	Amara, A., S.L. Gall, O. Schwartz, J. Salamero, M. Montes, P. Loetscher, M. Baggolini, J.L. Virelizier and F. Arenzana-Seisdedos. 1997. HIV coreceptor downregulation as antiviral principle: SDF-1 α -dependent internalization of the chemokine receptor CXCR4 contributes to inhibition of HIV replication. J. Exp. Med. 186: 139-146;
	42	Berger, E.A. 1997. HIV entry and tropism: the chemokine receptor connection. AIDS 11 (suppl A): S3-S16;
	43	Bieniasz, P.D., R.A. Fridell, I. Aramori, S.S.G. Ferguson, M.C. Caron and B.R. Cullen. 1997. HIV-1-induced cell fusion is mediated by multiple regions within both the viral envelope and the CCR5 co-receptor. EMBO 16: 2599-2609;

EXAMINER	DATE CONSIDERED
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12/27/04

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Applicants: Olson and Maddon
Serial No. : 09/464,902
Filed: December 16, 1999
Exhibit F

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Examiner Initials	Exh. No. [§]	Document Number			Date	Name	Class	Subclass	Filing Date If Appropriate
<i>Clb</i>	6	Pending claims in 09/888,938				Allaway et al.			06/25/01
	7	Allowed claims in 10/323,314				Dragic et al.			12/19/02
	8	0 8	6 2	7 6	8 4	Allaway et al.			04/02/96
		60	0 1	4 5	3 2	Allaway et al.			04/02/96
	9	0 8	6 6	3 6	1 6	Allaway et al.			06/14/96
		60	0 1	9 7	1 5	Allaway et al.			06/14/96
	10	0 8	6 7	3 6	8 2	Allaway et al.			06/25/96
FOREIGN PATENT DOCUMENTS									
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									Yes No
<i>ele</i>	33	0 0 3 5 4 0 9			06/22/00	PCT			
<i>ele</i>	34	0 1 6 4 7 1 0			09/07/01	PCT			
<i>ele</i>	35	0 2 2 2 0 7 7			03/21/02	PCT			
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)									
<i>ele</i>	44	Brelot, A., N. Heveker, O. Pleskoff, N. Sol and M. Alizon. 1997. Role of the first and third extracellular domains of CXCR4 in human immunodeficiency virus coreceptor activity. <i>J. Virol.</i> 71: 4744-4751;							
	45	Chan, D.C. and P.S. Kim. 1998. HIV entry and its inhibition. <i>Cell</i> 93: 681-684;							
	46	Connor, R.I., K.E. Sheridan, D. Ceradini, S. Choe and N.R. Landau. 1997. Change in co-receptor use correlates with disease progression in HIV-1 infected individuals. <i>J. Exp. Med.</i> 185: 621-628;							
	47	Crump, M.P., J.H. Gong, P. Loetscher, K. Rajarathnam, A. Amara, F. Arenzana-Seisdedos, J.L. Virelizier, M. Baggolini, B.D. Sykes and I. Clark-Lewis. 1997. Solution structure and basis for functional activity of stromal-cell derived factor-1; disassociation of CXCR4 activation from binding and inhibition of HIV-1. <i>EMBO</i> 16: 6996-7007;							
<i>ele</i>	48	Dagleish, A.G., P.C.L. Beverly, P.R. Clapham, D.H. Crawford, M.F. Greaves and R.A. Weiss. 1984. The CD4 (T4) antigen is an essential component of the receptor for the AIDS retrovirus. <i>Nature</i> 312: 763-766;							
EXAMINER <i>Clb</i>				DATE CONSIDERED <i>12/27/04</i>					
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ele	11	0 8 6 6 5 0 9 0		Allaway et al.			06/14/96
		60 0 1 9 9 4 1		Allaway et al.			06/14/96
	12	0 8 8 7 4 5 7 0		Allaway et al.			06/13/97
	13	0 8 8 7 4 6 1 8		Allaway et al.			06/13/97
	14	Pending claims in 09/724,105		Allaway et al.			11/28/00
	15	Pending claims in 09/852,238		Allaway et al.			05/09/01

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Translation	
							Yes	No
ele	36	0 2 0 6 8 6 0 8	09/06/02	PCT				
	37	0 2 0 8 3 1 7 2	10/24/02	PCT				
	38	0 3 0 7 2 7 6 6	09/04/03	PCT				
	72	9 8 1 8 8 2 6	05/07/98	PCT				

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

ele	49	Donzella, G.A., D. Schols, S.W. Lin, J.A. Este, K.A. Nagashima, P.J. Maddon, G.P. Allaway, T.P. Sakmar, G. Henson, E.D. Clercq and J.P. Moore. 1998. AMD3100, a small molecule inhibitor of HIV-1 entry via the CXCR4 co-receptor. Nat. Med. 4: 72-77;
	50	Doranz, B.J., K. Grovit-Ferbas, M.P. Sharron, S.H. Mao, M.B. Goetz, E.S. Daar, R.W. Doms and W.A. O'Brien. 1997. A small molecule inhibitor directed against the chemokine receptor CXCR4 prevents its use as an HIV-1 co-receptor. J. Ex. Med. 186: 1395-1400;
	51	Doranz, B.J., Z.-H. Lu, J. Rucker, T.-Y. Zhang, M. Sharron, Y.-H. Cen, Z.-X. Wang, H.-H. Guo, J.-G. Du, M.A. Accavitti, R.W. Doms and S.C. Peiper. 1997. Two distinct CCR5 domains can mediate co-receptor usage by human immunodeficiency virus type 1. J. Virol. 71: 6305-6314;
	52	Dragic, T., V. Litwin, G.P. Allaway, S.R. Martin, Y. Huanh, K.A. Nagashima, C. Cayanan, P.J. Maddon, R.A. Koup, J.P. Moore and W.A. Paxton. 1996. HIV-1 entry into CD4+ cells is mediated by the chemokine receptor CC-CKR-5. Nature 381: 667-673;

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ele

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elo	16	0 9	5 9	4 9	8 3			Olson et al.				06/15/00
	17	0 9	6 6	3 2	1 9			Olson et al.				09/15/00
	18	60	2 8	2 3	8 0			Olson et al.				04/06/01
	19	60	2 6	6 7	3 8			Olson et al.				02/06/01
	20	2 0 0 2 / 0 1 4 6 4 1 5						10/10/02	Olson et al.			
	21	2 0 0 2 / 0 1 0 6 3 7 4						08/08/02	Olson et al.			
		60	3 5	8 8	8 6			Olson et al.				02/22/02
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)												
	53	Hill, C.M., D. Kwon, M. Jones, C.B. Davis, S. Marmon, B.L. Daugherty, J.A. DeMartino, M.S. Springer, D. Unutmaz and D.R. Littman. 1998. The amino terminus of human CCR5 is required for its function as a receptor for diverse human and simian immunodeficiency virus envelope glycoproteins. <i>Virology</i> 248: 357-371;										
	54	Kwong, P.D., R. Wyatt, J. Robinson, R.W. Sweet, J. Sodroski and W.A. Hendrickson. 1998. Structure of an HIV gp120 envelope glycoprotein in complex with the CD4 receptor and a neutralizing human antibody. <i>Nature</i> 393: 648-659;										
	55	Laal, S., S. Burda, M.K. Gorny, S. Karwowska, A. Buchbinder and S. Zolla-Pazner. 1994. Synergistic neutralization of human immunodeficiency virus type 1 by combinations of human monoclonal antibodies. <i>J. Virol.</i> 68: 4001-4008;										
	56	Li, A., H. Katinger, M.R. Posner, L. Cavacini, S. Zolla-Pazner, M.K. Gorny, J. Sodroski, T.C. Chou, T.W. Baba and R.M. Ruprecht. 1998. Synergistic neutralization of simian-human immunodeficiency virus SHIV-vpu+ by triple and quadruple combinations of human monoclonal antibodies and high-titer antihuman immunodeficiency virus type 1 immunoglobulins. <i>J. Virol.</i> 72: 3235-3240;										
	57	Mack, M., B. Luckow, P.J. Nelson, J. Cihak, G. Simmons, P.R. Clapham, N. Signoret, M. Marsh, M. Stangassinger, F. Borlat, T.N.C. Wells, D. Schlondorff and A.E.I. Proudfoot. 1998. Aminoxyptane-RANTES induces CCR5 internalization but inhibits recycling: a novel inhibitory mechanisms of HIV infectivity. <i>J. Ex. Med.</i> 187: 1215-1224;										
	58	McKnight, A.D. Wilkinson, G. Simmons, S. Talbot, L. Picard, M. Ahuja, M. Marsh, J.A. Hoxie and P.R. Clapham. 1997. Inhibition of human immunodeficiency virus fusion by a monoclonal antibody to a coreceptor (CXCR3) is both cell type and virus strain dependent. <i>J. Virol.</i> 71: 1692-1696										
EXAMINER <i>E.Lc</i>				DATE CONSIDERED <i>12/27/04</i>								
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el	22	10 0 8 1 1 2 8		Olson et al.			02/22/02
	23	2003/0044411	03/06/03	Olson et al.			
	24	2003/0092632	05/15/03	Dragic et al.			
	25	2003/0228306	12/11/03	Olson et al.			
↓	26	Pending claims in 10/763,545		Olson et al.			01/23/04
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
el	59	Strizki, J.M., J. Davis-Turner, R.G. Collman, J. Hoxie and F. Gonzalez-Scarano. 1997. A monoclonal antibody (12G5) directed against CXCR4 inhibits infection with the dual-tropic human immunodeficiency virus type 1 isolate HIV-1 89.6 but not the T-tropic isolate HIV-1 HxB. J. Virol. 71: 5678-5683;					
	60	Trkola, A., T. Dragic, J. Arthos, J. Binley, W.C. Olson, G.P. Allaway, C. Cheng-Mayer, J. Robinson, P.J. Maddon and J.P. Moore. 1996. CD4-dependent, antibody sensitive interactions between HIV-1 and its co-receptor CCR-5. Nature 384: 184-187;					
	61	Vijh-Warrier, S., A. Pinter, W.J. Honnen and S.A. Tilley. 1996. Synergistic neutralization of human immunodeficiency virus type 1 by a chimpanzee monoclonal antibody against the V2 domain of gp120 in combination with monoclonal antibodies against the V3 loop and the CD4-binding site. J. Virol. 70: 4466-4473;					
	62	Wu, L., G. LaRosa, N. Kassam, C.J. Gordon, H. Heath, N. Ruffing, H. Chen, J. Humblia, M. Samson, M. Parmentier, J.P. Moore and C.R. Mackay. 1997. Interaction of chemokine receptor CCR5 with its ligands: multiple domains for HIV-1 gp120 binding and a single domain for chemokine binding. J. Exp. Med. 186: 1373-1381;					
	63	Ylisastigui, L., J.J. Vizzavona, E. Drakopoulou, P. Paindavoine, C.F. Calvo, M. Parmentier, J.C. Gluckman, C. Vita and A. Benjouad. 1998. Synthetic full length and truncated RANTES inhibit HIV-1 infection of primary macrophages. AIDS 12: 977-984;					
	64	Tilley, S. A., W.J. Honnen, S. Warrier, M.E. Racho, T.C. Chou, M. Girard, E. Muchmore, M. Hilgartner, D.D. Ho, M.S.C. Fung, and A. Pinter. 1991. Potent Neutralization of HIV-1 by Human and Chimpanzee Monoclonal Antibodies Directed Against Three Distinct Epitope Clusters of gp120. Sixieme Colloque Des Cent Gardes. 211-216;					
↓	65	Tilley, S.A., W.J. Honnen, M.E. Racho, T.C. Chou, and A. Pinter. 1992. Synergistic Neutralization of HIV-1 by Human Monoclonal Antibodies Against the V3 Loop and the CD4-Binding Site of gp120. AIDS Research and Human Retroviruses 80:4: 461-467;					
EXAMINER C. Lee		DATE CONSIDERED 12/27/04					
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el	27	Pending claims in 09/460,216				Allaway et al.			12/13/99			
	74	6	5	2	8	6	2	5	03/04/03	Wu et al.		
	75	2003/002304			01/30/03	Li et al.						
	76	2002/0048786			04/25/02	Rosen et al.						
	77	2002/0061834			02/09/01	Rosen et al.						
	78	2002/0076745			06/20/02	Li et al.						
↓	79	2002/099176			07/25/02	Li et al.						
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)												
el	66	Choe, H., M. Farzan, Y. Sun, N. Sullivan, B. Rollins, P.D. Ponath, L. Wu, C.R. Mackay, G. LaRosa, W. Newman, N. Gerard, C. Gerard, and J. Sodroski. 1996. The Beta-Chemokine Receptors CCR3 and CCR5 Facilitate Infection by Primary HIV-1 Isolates. Cell 85: 1135-1148;										
	67	Doranz, B.J., J. Rucker, Y. Yi, R. Smyth, M. Samson, S.C. Peiper, M. Parmentier, R.G. Collman, and R.W. Doms. 1996. A Dual-Tropic Primary HIV-1 Isolate That Uses Fusin and Beta-Chemokine Receptors CCR-5, CCR-3, and CCR-2b as Fusion Cofactors. Cell 85: 1149-1158;										
	68	Deng, H., R. Liu, W. Ellmeier, S. Choe, D. Unutmaz, M. Burkhardt, P.D. Marzio, S. Marmon, R.E. Sutton, C.M. Hill, C.B. Davis, S.C. Peiper, T.J. Schall, D.R. Littman, and N.R. Landau. 1996. Identification of a Major Co-Receptor for Primary Isolates of HIV-1. Nature 381: 661-666;										
	69	Feng, Y., C.C. Broder, P.E. Kennedy, E.A. Berger. 1996. HIV-1 Entry Cofactor: Functional cDNA Cloning of a Seven-Transmembrane, G Protein-Coupled Receptor. Science 272: 872-877;										
	70	Fradd, F., M.E. Mary. 1989. AIDS Vaccines: An Investor's Guide by Shearman Lehaman Hutton. Page 10 (Fig. 2);										
	71	De Rossi, A., M. Pasti, F. Mummano, M. Panizzo, M. Dettin, C. Di Bello and L. Chieco-Bianchi. 1995. Synthetic Peptides from the Principle Neutralizing Domain of Human Immunodeficiency Virus Type 1 (HIV-1) Enhance HIV-1 Infection through a CD4-Dependent Mechanism. Virology 184:187-196;										
↓	73	Chen et al. 1997. Genetically Divergent Strains of Simian Immunodeficiency Virus Use CCR5 as a Coreceptor for Entry. J. of Virol. 71(4): 2705-2714;										
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ele	80	2002/0106742	08/08/02	Samson et al.			
	81	2002/0110805	08/15/02	Samson et al.			
	82	2002/0110870	08/15/02	Samson et al.			
↓	83	2002/0132269	09/19/02	Li et al.			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

ele	84	Co et al. 1991. Humanized Antibodies for Antiviral Therapy. Proc. Natl. Acad. Sci. U.S.A. 88: 2869-2873;
	85	Trkola et al. 2001. Potent Broad-spectrum Inhibition of Human Immunodeficiency Virus Type 1 by the CCR5 Monoclonal Antibody PRO 140. J. Virol. 75: 579-588;
	86	Olson et al. 1999. Differential Inhibition of Human Immunodeficiency Virus Type 1 Fusion, gp 120 Binding and CC-chemokine Activity of Monoclonal Antibodies to CCR5. J. Virol. 73: 4145-4155; and
↓	87	Parren et al. 2001. Antibody Protects Macaques Against Vaginal Challenge with a Pathogenic R5 Simian/Human Immunodeficiency Virus at Serum Levels Giving Complete Neutralization In Vitro. J. Virol. 75: 8340-8347.

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